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SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE • FEBRUARY 13, 1943

Soldiers of Mercy

See Page 102

A SCIENCE SERVICE PUBLICATION

Do You Know?

Cigaret paper from flax straw is a new by-product of the flax industry.

Hens pick at the boards in the poultry houses, but pick less at boards painted gray than those of any other color.

Formula-fed infants may require more *vitamin C* than breast-fed, as human milk is much richer in vitamin C than cow's milk.

Chicory, used almost exclusively in the blending of coffee, is produced principally in Michigan and used largely in the South.

Blind persons are employed very successfully in certain types of precision assembly work by scientific instrument manufacturers.

With Manila hemp no longer available, more *sisal* is being used in rope-making; the supply comes from the Caribbean countries.

To study *mosquitoes* in the war on malaria among rubber and other workers on the Amazon, a special laboratory has been opened at Belem, Brazil.

The automobile trailer, once the playboy of the roads, is now in serious business, one serving as a *maternity ward* in a 300-trailer camp for war workers.

To learn how to determine the sex of day-old chickens, nine women and ten men have enrolled in a short course at the Iowa State College to become commercial *"chick-sexers."*

Question Box

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Most articles which appear in SCIENCE NEWS LETTER *are based on communications to Science Service, or on papers before meetings. Where published sources are used they are referred to in the article.*

Rubber instead of gold will probably be the principal product transported over the new highway from the Marcapata gold mines to Cuzco, Peru.

Hundreds of tons of *pinon nuts* are harvested annually from the native slow-growing pinon pine of the dry, bleak and arid high country of the Southwest.

All of Peru's exportable *quinine* will be sent to the United States under an agreement just signed by the two countries.

American Indians ground *pecan nut* meat in a stone mortar, mixed it with corn meal, and made cakes of high caloric value and of good taste.

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MEDICINE

One-Day Impetigo Cure

Sulfathiazole, in form like fresh white mud, is applied to the distressing sores and next day they are gone. No new sores develop.

➤ A ONE-DAY, one-treatment cure of impetigo, unpleasant, contagious and sometimes dangerous skin disease likely to be especially prevalent under war conditions, has been achieved by a new white-mud sulfa drug treatment.

Success with the treatment, which also promptly stops the spread of impetigo, is announced by Dr. T. N. Harris, of the University of Pennsylvania (*Journal, American Medical Association*, Feb. 6).

Sulfathiazole is the drug Dr. Harris used, though he suggests other sulfa drugs could also be used with the new method. Instead of giving sulfathiazole by mouth or using an ointment or ordinary powder of the drug, as has been done heretofore in impetigo cases, he uses a microcrystalline form of sulfathiazole in a 20% suspension in water.

A drop or two of this suspension, which looks like milk of magnesia, is put on a gauze dressing. As the water seeps into the gauze to a greater extent than the sulfathiazole crystals, a small collection of pure crystals in water, looking like fresh white mud, is left on the gauze.

Advantages of the microcrystalline sulfathiazole are that it does not cake on the impetigo sores, as powdered sulfa drugs do, and does not form a crust with the matter oozing from the sores, as sulfa drug ointments do. Instead the white mud-like sulfa crystals on the dressing get right into the fluid in and about the sores where they can act more effectively to stop the infection.

When the dressing is removed the following day, a dry pink spot is present where the impetigo sore had been. New skin grows in and the pink color fades within a few days without further treatment. No new sores developed in any of the 15 children treated, nor did any new cases develop in the two outbreaks after the first ones had had their single white sulfa mud treatment.

Besides this rapid healing and prompt checking of the contagion, Dr. Harris points to another advantage of the new treatment. Impetigo in children past infancy is generally regarded as unimportant so far as the patient's general health is concerned, but numerous cases have been reported in which impetigo was the forerunner of serious kidney disease.

The microcrystalline form of sulfathiazole on which the new treatment depends for success was developed less than a year ago for surgical use by Dr. L. A. Chambers and associates of Philadelphia.

Science News Letter, February 13, 1943

MEDICINE

Sulfanilamide Used For Rheumatic Fever

➤ FRESH HOPE that sulfanilamide may prove an effective weapon in fighting off recurrent attacks of rheumatic fever appears in a report from Dr. Caroline A. Chandler and Dr. Helen B. Taussig, of the Johns Hopkins Hospital and School of Medicine, to the *Bulletin* of the Johns Hopkins Hospital (Jan.).

They gave small doses of this drug daily during two winters and springs to two groups of rheumatic fever patients, 16 the first season and 25 the second. Similar groups of patients who did not take the drug served as controls for judging the value of the treatment.

Of a total of 41 patient-seasons over two years, only one patient receiving sulfanilamide developed any sign of a return-attack of rheumatic fever, and that was questionable, consisting only of a faint heart murmur which not all who examined the patient heard. Among the patients who did not get sulfanilamide, there were five recurrences of rheumatic fever out of a total of 41 patient-seasons, or more than 10%. Two of the attacks extended into the second season.

The number of patients, the doctors point out, is too small for the findings to have statistical significance. The study had been planned to extend for five years with more patients being added to the group, but has had to be discontinued. Coming after similar results with sulfanilamide treatment previously reported by other doctors, how-

NEW HELLDIVER—This new Curtiss A-25 is a two-place, mid-wing monoplane powered with a 1700-horsepower Wright Cyclone Engine and equipped with a three-bladed Curtiss electric propeller and retractable landing gear. Just what it can do is kept secret, but the manufacturer claims that it has greater speed, range and striking power than any other dive-bomber now now in action. Quantity production on a continuously moving assembly line is now under way.

ever, the results on even this small number of patients seem encouraging.

Sulfanilamide cannot be considered a cure for rheumatic fever, on the basis of work so far reported. But if it can ward off further attacks after the first one, it will improve the outlook for patients who survive a first attack. This disease, which attacks children chiefly, damages the heart. Each attack after the first one threatens further damage to the heart, and each year thousands of children and young men and women die of heart trouble caused by this disease.

The question of whether to give sulfanilamide to ward off further attacks of rheumatic fever should, of course, be determined in every case by the patient's doctor. The drug is not given during attacks.

Science News Letter, February 13, 1943

MILITARY SCIENCE

Armored Trains a Success

Bearing batteries of light and medium field guns and large numbers of machine and anti-aircraft weapons, Russians have found them powerful.

➤ ARMORED TRAINS, bearing batteries of light and medium field pieces and large numbers of machine and anti-aircraft guns, have been operating successfully in the Russian campaigns, *Infantry Journal* (February) states; and its editor recommends a careful study of this weapon for possible adoption by the American Army.

Not much information is available about Russian armored trains, and a considerable part of the little we have comes from enemy sources. The Germans belittle them, but the cheers they send up when they succeed in destroying one of them belie their own propaganda. Nazi sources state that the Red Army possessed in all about 100 of these trains, of which they claim to have destroyed 30. If this is anywhere near accurate, the Russians must think rather well of this means of fighting, to have made so heavy an investment of materiel and men in them.

As a rule, the *Infantry Journal* states, the trains have been used in support of attacking infantry, as a kind of highly mobile artillery that can rush up, pour in a heavy volume of fire, and then get out before enemy batteries can range on them. Sometimes, however, they are sent out on independent missions, just as bodies of tanks are nowadays. They are, however, seldom used to cover a retreat—there is too much danger of being cut off and captured.

Armored trains have been likened to tanks on rails, but this simile is not as accurate as it might at first seem. For one thing, heavier guns can be used on trains than are practicable in tanks, and the rail-carried gun platforms make for much steadier fire. Moreover, telephonic inter-communication throughout the length of the train enables one command to control and concentrate all the fire rapidly on a single target. Regulation range-finders can be used if desired. A more apt comparison would be to say that an armored train is a light cruiser on wheels.

It might seem at first thought that binding so much fire power to the rails would be a bad tactical investment, with war flowing all over the countryside as it does nowadays. However, the whole story of the Russian campaign has been a struggle for cities and towns, as witness the constant recurrence of the phrase "captured inhabited localities" in Soviet communiqués. No matter how the war may wander, in the end it heads toward the railroad junction—or breaks forth from there.

Needless to say, all artillery pieces on an armored train are turret-mounted, to give all-round command. They can thus fire on either broadside when the battle line runs more or less parallel to the track, or be trained well "forward of the beam" when it crosses the right-of-away up ahead.

It would seem desirable, in the latter case especially, to have at least part of the guns capable of howitzer-type fire, should it be necessary to lob the shells right over the engine. The American 105-millimeter piece, or the British 25-pounder "gun-how" would seem well adapted for this kind of action.

Defense against armored trains is admittedly a pretty severe problem. As outlined by the Germans, it takes two forms: destroying the track ahead of the train if possible, or direct fire with the heaviest type anti-tank guns. In the German case, the dual-purpose 88-millimeter gun, with its high velocity and heavy projectiles, is the only weapon that is at once quick enough to hit an armored train and strong enough to make the hits count.

Armored trains have been used in military operations, at least in an experimental way, almost since the beginning of railroading. They appeared on both sides during the Civil War in this country, but have not been much in evidence during our later military operations.

Of course, the huge railway guns of World War I days have no relation to the armored train: they were merely a means of getting highly immobile ordnance into firing position, fired only from far behind the front lines at targets deep within enemy territory, and they carried no armor at all.

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Corn is an essential war crop because it produces more feed per acre than most crops, and it is convertible into meat on the farm.

It has been found that the *radio beam* used to guide airplanes may wander as much as 10 degrees from its normal positions during severe snowstorms, returning to normal position with the abatement of the storm.

TO THE FRONT — Here is the blood you donated to the Red Cross on its way to the front lines in New Guinea. It is carried on litters made by the Papuan natives.

TRANSFUSION—In Northern Papua, in a tiny blackout cubicle, Corporal Clarence Jaschinskit, of Sheboygan, Wisc., is shown holding the blood plasma for a transfusion as Capt. Arnold Nuestadter, of Flushing, N. Y., keeps his finger on the pulse of the wounded soldier. The Army and Navy have requested 4,000,000 pints of blood from the American Red Cross in 1943.

PUBLIC HEALTH

Still Greatest Saboteur

Problem of control of venereal disease greater in any war and this war has brought a few new problems. Concentration on spreaders urged.

➤ "VENEREAL DISEASE is still the greatest saboteur," Dr. Roger E. Heering, U. S. Public Health Service, declared at a conference on social hygiene sponsored by the New York Tuberculosis and Health Association.

The control of venereal diseases in war time is basically no different from their control under normal conditions, he stated, but the problem of control becomes greater in war and this present war has brought a few new problems in venereal disease control.

"Local talent—so-called charity girls or chippies" are figuring more and more prominently in the spread of venereal disease in this war, Dr. Heering pointed out. This confounds the police attack on prostitution.

Overwhelming concentration of troops in the South, where both white and colored races have a phenomenally high incidence of veneral disease, and thinning of the color line are other special problems in control of venereal disease during the present war.

"The population, as well as armed forces, is on the move and civilians, equally with the soldier and sailor, are swept into the morale-wrecking effects of change, break-up of home and stabilizing influences, loneliness and unrest," Dr. Heering pointed out.

Scientific discovery of a so-called one-day cure of syphilis is removing the fear which was often effective in prevention of venereal disease.

Public health, police and judicial concentration on venereal disease spreaders was commended by Dr. Heering but he pointed out that in addition to removing these people from circulation and treating them to make them non-infectious, social and psychiatric rehabilitation is needed.

"Venereal disease control does not involve a lot of mysterious hocus-pocus but rather an appreciation of the problem, a reasonable knowledge of the diseases to be dealt with, a little understanding of human nature, and the conviction that something can and must be done," Dr. Heering declared. "The infected persons must be found and treated until no longer capable of transmitting infection. With the exception of syphilis, this means cure. These diseases are communicable diseases, not a disgrace.

"The prostitute is not a criminal but a social and frequently a psychiatric problem, who already is, or will become a health problem. Her exploiters are the criminals."

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Children Should Advise

➤ PUTTING the war-increased problem of juvenile delinquency up to the children themselves to solve is the novel but effective and democratic method urged by Arthur E. Fink, southeastern regional supervisor for the Social Protection Section of the Federal Security Agency, at the social hygiene conference held under the auspices of the New York Tuberculosis and Health Association.

That this method works is shown by an example Mr. Fink cited from a town whose best citizens met one night in the local school to discuss ways and means of curbing the growing delinquency.

The group was about to vote on a recommendation to the Town Council for a nine o'clock curfew for all under the age of 18 years. One man happened to notice a slogan the teacher had written on the blackboard for the pupils. It said:

"The essence of democracy is cooperation and representation, it is not genuine without it."

The man asked the chairman to wait and pointing to the slogan said:

"Have we asked the kids about this? They're part of this town, you know."

"For the next week," Mr. Fink concluded the story, "various phases of the local delinquency problem were discussed in the social science classes in each school. At the week's end a student vote was taken, and now the town has a curfew, but it's not on the statutes; the youngsters observe it themselves.

"Let's get the youngsters to work on this problem, too," Mr. Fink urged. "It's the democratic way, and what are their big brothers fighting for, if not to preserve it?"

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WILDLIFE

Water Hyacinth, River Pest, On Increase in California

➤ WATER HYACINCTH, a floating weed of tropical origin that has become thoroughly established in Southern rivers and is a major hindrance to navigation there, is now threatening to assume a similar role in the San Joaquin river in California, Prof. Ira L. Wiggins of Stanford University reports (*Science*, Feb. 5). It has been known to be present in local spots for some years, but during the past season rafts of the plant 10 to 15 feet wide and several times as long were observed in the river near Stockton.

While it is possible that natural causes may hold the weed in check, Prof. Wiggins points out that no such luck can be counted on, and suggests a campaign of extermination before the growth gets out of hand.

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TRIPLE DUTY—the Army nurse's new greatcoat does triple duty. Its water-repellent, wind-resistant material, sealed seams and hood make it a raincoat; its removable wool lining makes it a warm topcoat; the lining itself is finished, trimmed and buttoned to become a bathrobe.

MILITARY SCIENCE

New Nurse's Uniform

Army Nurse Corps gets birthday present of new wardrobe suited to global war. Differs from WAAC's in hat, bag, buttons and insignia.

See Front Cover

➤ A COMPLETELY new, smart and practical wardrobe suited to global war from the Arctic to the tropics, from hospitals at home to service in very advanced theaters of operations at the front, has been designed for the Army Nurse Corps.

Announcement of the new uniforms was made by the War Department as a birthday present to the Nurse Corps on the anniversary of its founding and a tribute to its 42 years of service. Actual field experience in this war, such as that of the heroic Army nurses on Bataan who had to borrow servicemen's field service shoes for heavy duty work and the men's overalls for camouflage, was part of the reason for the change in the nurses' uniforms. Simplification of the supply problem, now that the Army has other women besides nurses to uniform, was another reason for the change.

The new uniforms will be issued to nurses overseas on July 1 and to nurses in the United States on Sept. 1.

Dress uniforms for the Army nurses will be of olive drab exactly like those of the WAAC except for: 1. the cap which is flat in back, softer, more feminine and more comfortable looking; 2. the Army Nurse Corps insignia worn on the jacket; 3. gilt buttons with U. S. Army insignia instead of the WAAC plastic buttons; and 4. the bag, which is envelope instead of pouch style.

For wear in field hospitals and other installations in the theaters of operations, the nurses will wear a one-piece wrap-around uniform of brown and white pin-striped seersucker. Easy to launder, requiring no ironing, crisp and fresh close-up, and fading into the background for camouflage at a distance, this uniform fastens with one hook and a tie, so the nurse "will not have to worry about sewing on a button when she has to save a life," as one officer put it.

When she moves into the very advanced zone, the Army nurse will don trousers and shirt of herringbone twill, similar to those worn by the servicemen, with shoes that lace up to the ankle and leggings for protection against marsh and mosquitoes, and regular Army helmet. "Cargo pockets" on front of the trousers will hold necessary supplies.

When she goes into the Arctic, she will have the same protection against cold and storm as the ski troops; a reversible parka, white on one side and khaki on the other, with fur trimmed hood, and woman's type ski pants of wind-resistant, water-repellent fabric; pile fabric liners to wear underneath this, consisting of close-fitting jacket and under trousers of fur-like alpaca and mohair pile fabric to provide an insulating layer to hold body warmth; warm, trigger-finger gloves; and rubber shoe pacs.

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PHARMACY

Rumors of Restrictions On Sulfa Drugs Unfounded

➤ RUMORS of restrictions on civilian use of the sulfa drugs are unfounded. War Production Board officials state that no such restrictions have been ordered.

The sulfa drugs are critical and scarce but no real shortage exists, WPB states. It is doing everything it can to provide for military and civilian needs for these life-saving chemicals.

"Discretion" in the use of the sulfa drugs, however, is urged by WPB officials. Sulfadiazine is the scarcest of the sulfa drugs and the one most in demand by military and civilian physicians. It is hoped, therefore, that when a physician thinks sulfanilamide or sulfathiazole can be used as safely and effectively as sulfadiazine, he will choose one of these others instead of the scarce sulfadiazine.

The layman can help by not clamoring for a sulfa drug for a cold, boils or some minor infection when his physician says sulfa drug treatment is unnecessary.

The reason for the scarcity of the sulfa drugs is that enormous amounts are being used or reserved for use in the treatment of war wounds, where they are performing miracles in pre-

venting or checking infection that would otherwise take heavy toll of life and limb. The publicity given these drugs has also tended to increase the demand for them.

Production of all sulfa drugs has expanded tremendously since Pearl Harbor. This increase has been financed and the production carried on by the old-line drug manufacturing companies. The Government has assisted by assigning high priority ratings to facilities and equipment for their production.

Although sulfadiazine is the scarcest of the sulfa drugs, WPB is making sure that there will be a supply of it on hand sufficient to take care of all real needs for it. The same, of course, holds true for the other sulfa drugs.

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PSYCHOLOGY

Jap Behavior Explained

Ruthlessness as a covering for inner uncertainty said to have basis in treatment in infancy. Mothers spoil them for about a year, then reject them.

➤ OVERBEARING, bullying conduct on the part of Japanese men toward those who resist their demands is traced to a severe emotional shock which most of them receive while they are still babies, by Prof. John F. Embree, University of Toronto anthropologist now on war service in Washington, D. C. He sets forth his observations and opinions in a new Smithsonian Institution publication, one of a series giving background information on the war.

Japanese mothers, Prof. Embree states, make themselves virtually the slaves of each baby until the next one arrives. The infant can nurse at any time it wishes, and if it sees anything it wants it can have it without argument, simply by crying for it. This intensive course of spoiling goes on as long as the child is the youngest.

As soon as the next baby is born, however, the mother's devotion is monopolized by the newcomer, and little Jiro is transferred to the much less attentive care of a nurse or an older sister. As a result there may be weeks of frequent temper tantrums.

This sudden shift in status, at the tender age of only one or two years, "creates an early sense of insecurity which in turn produces an adult who is never absolutely sure of himself and who through compensation may become almost paranoic.

"The adult manifestation of the temper tantrum resulting from lack of attention or fancied slight is assassination, and the deep shame felt from real or threatened loss of face is manifested by suicide."

Another factor in the outrageous behavior of some Japanese, Prof. Embree thinks, is the bad example set by one of the Shinto gods, Susano-o No Mikoto, His Swift Impetuous Male Augustness, a being notable mainly for crude horseplay. Once, legend says, Susano-o greatly shocked his better-behaved sister, the sun-goddess Amaterasu, by flinging a newly-flayed horse-hide into the house where she and eight of her weaving women were busy.

Japanese human beings, Prof. Embree feels, are not genetically different from other racial groups; but with a combination of the solid conviction of male Japanese superiority fostered by national policy and social custom alike, the baby-spoiling program ending with a jerk, and myths like that of Susano-o, a mixture of uncertainty and violent ruthlessness is just about what one should expect.

Elsewhere in the book, other factors in Japanese life are described and their effects analyzed. Prof. Embree sees Japan as essentially a nation of peasant culture which has undertaken the engrafting of the material side of Western culture without substituting the concomitant mental and spiritual attitudes of the West for the traditional Japanese feudalism. The result of this incongruous mixture is something very close to a national psychosis.

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White shoes are suggested as a safety measure, particularly for women when on the street during a dim-out—drivers "invariably look at the feet".

Dog-hair, clipped from Newfoundlands, Chows and Samoyeds, is being used in the Netherlands for knitting sweaters, gloves and other apparel.

NUTRITION

Mushrooms Supply Food As Well as Flavor

➤ MUSHROOMS, it has been discovered, supply nourishment as well as flavor to the diet. This finding, made by Dr. E. E. Anderson and Dr. C. R. Fellers, of the Massachusetts Agricultural Experiment Station at Amherst, Mass., will come as welcome news especially now when it is so important to consider everything we eat from the standpoint of how much nourishment it contributes.

Of course, you may have been one of those who always thought mushrooms were nourishing and called them the "vegetable beefsteak." Many scientists, however, have given mushrooms a low place nutritionally. Some of this confusion, the Massachusetts scientists report, was due to failure to take into account the differences between the many types of mushrooms. These scientists studied the composition and nutritive properties of just one type, the commercially cultivated mushroom, *Agaricus campestris,* and not any wild or foreign mushrooms.

They found, among other things, that while mushrooms do not deserve the title of "vegetable beefsteak," they do contain enough protein to keep rats alive for a six-weeks' test period and promote some growth. Their protein is a "partially incomplete one," similar to the gliadin of wheat or the hordein of barley. Properly supplemented, mushrooms are suitable as a source of protein, although few persons eat enough mushrooms to satisfy much of their protein needs from them.

Mushrooms also supply vitamins and two minerals, iron and copper, the Massachusetts scientists discovered. In fact they are one of the best plant sources of some members of the vitamin B complex. A prepared serving of about three and one-half ounces of fresh mushrooms would provide, the scientists state, about one-fifth of a grown-up's daily requirement of riboflavin and over one-quarter of his requirement of pellagra-preventing niacin (nicotinic acid). They also contain appreciable amounts of vitamins B_1, C, and K.

The scientists conclude that "although mushrooms will probably always be eaten for their innate flavor and taste appeal, they do possess definite food values and are not a purely luxury food in our war-time dietary."

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PUBLIC HEALTH

Triethylene Glycol Vapor May Prevent Epidemics

➤ A POTENTIAL new weapon for chemical warfare against influenza is announced by Dr. O. H. Robertson, Dr. Theodore T. Puck, Dr. Henry F. Lemon and Dr. Clayton G. Loosli, of the University of Chicago's Department of Medicine (*Science*, Feb. 5).

Triethylene glycol, a chemical relative of automobile and airplane engine antifreezes, is the new weapon. A drop or two in the form of a vapor of this chemical distributed through a small room (two-tenths of a cubic centimeter in 800 cubic feet of air) protected mice completely against an amount of airborne influenza virus which a short time before had caused the death of all the exposed (control) mice. Similar small concentrations of triethylene glycol vapor in air are also deadly to pneumonia and streptococcus germs, the Chicago experimenters found.

Tests on the possible poisonous effects of this chemical when swallowed, or when inhaled over a long period of time, are now under way.

Previously Dr. Robertson and associates had found that propylene glycol was an efficient destroyer of disease germs in the air and was relatively non-poisonous to laboratory animals. Triethylene glycol, however, is so much more deadly to the germs that if it proves equally safe, it will be a better weapon to use in attempts to stop influenza epidemics by air sterilization.

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AGRICULTURE

Record Fumigation Job On Stored Grain in Hawaii

➤ THE LARGEST fumigation job on record was recently completed.

Successful fumigation of a million-cubic-foot warehouse containing stored cereals, vital to Pacific defense, was announced at the meeting of the Hawaiian Academy of Science by Dr. David T. Fullaway, entomologist at the Board of Agriculture and Forestry, Territory of Hawaii.

After Pearl Harbor, a six months' supply of cereals for the civilian population was shipped to the Territory and most of it was stored in a big new warehouse. Within a few months the wheat and corn became heavily infested with flour-moth larvae, thus endangering the several million dollars' worth of rice which already had its own quota of beetles.

A gang of workmen was set to spraying with a modified Flit mixture, the exposed surfaces in the warehouse where the moths rested, but this had little effect. "The larvae," said Dr. Fullaway, "came out of the bags by the millions on account of the heat generated by their crowding. Hundreds of thousands of these were trapped in a sticky barrier laid down around the sacks."

It was decided that fumigation was the only thing that would save the food, which not only had a high monetary value but might become the last bulwark against starvation in case of blockade or invasion.

One of the smaller warehouses was fumigated as a pilot operation and then the big job was tackled. Methyl bromide was led in through quarter-inch copper tubing. Special gas masks for the protection of operators were used.

The gas alone cost $1,725 which, however, amounted to less than one cent per bag.

Science News Letter, February 13, 1943

NUTRITION

New Cookbook Tells Army About Dehydrated Foods

➤ FIRST EDITION of a new American cookbook, The Dehydrated Foods Cooking Manual, published by the subsistence branch of the Quartermaster Corps, has just come off the press.

The cookbook gives directions and recipes for making dishes from the new dehydrated foods that are being used for troops overseas because of the saving in shipping space. The book is intended for Army cooks only and will not be available to the public at present.

Dishes prepared according to directions from satisfactory dehydrated foods, the Quartermaster Corps states, usually cannot be told from dishes prepared from fresh materials.

By cooking the foods in the water in which they are soaked for rehydration, vegetable salts, sugars, minerals and vitamins are saved. Proper temperature for rehydration and prompt prepation once rehydration is started are also important for producing a satisfactory dish from the dehydrated foods.

Recipes for preparing and cooking dehydrated apples, beets, cabbage, carrots, white potatoes, sweet potatoes, rutabagas and eggs, and also pies, cakes and puddings from dehydrated foods are included in the new cookbook.

Science News Letter, February 13, 1943

IN SCIENCE

MILITARY SCIENCE

Periscope for Tanks Gives Commander Wider View

➤ TANKS lumbering across the battlefield have been likened more than once to giant beetles. Unfortunately, to the near-invulnerability of beetles is added also the near-blindness of beetles.

To overcome this handicap an Army officer, Lieut. Col. David J. Crawford, has invented a wide-angle periscope, on which he has just been granted U. S. patent 2,307,759. In it, the slanting mirrors at top and bottom are wide enough to permit the tank commander to use both eyes, seeing nearly as wide a section of the horizon as he would with ordinary outside vision. The upper mirror, exposed to enemy fire, is quickly and easily replaceable if it is shattered during action.

At one side, coming into play if the officer shuts one eye, is a small telescope with aiming cross-hairs. By fixing this on any target that offers and then bringing the gun into alignment, the officer can bring his fire power into action more quickly and accurately than has heretofore been the case.

Science News Letter, February 13, 1943

PUBLIC HELTH

Slight Decrease in Meningitis Is Reported

➤ MENINGITIS cases reported by state health officers to the U. S. Public Health Service decreased slightly to a total of 314 for the week ending Jan. 30. No report has been received yet from Rhode Island, which had 25 cases the previous week, but even if Rhode Island again reports 25 cases, it will not bring the week's total up to the high figure of 354 recorded the week ending Jan. 23.

Influenza increased slightly from 4,387 to 4,852 cases with Texas, Virginia, South Carolina and Alabama reporting the largest numbers of cases.

Measles increased from 8,807 to 10,865 cases. Pennsylvania, New York and Utah had the largest numbers of cases.

Science News Letter, February 13, 1943

NCE FIELDS

AERONAUTICS

Pick-a-Back Glider Helps Big Plane to Take Off

➤ HELPING a big, heavily loaded bomber or transport plane to get off the ground by means of an engineless glider mounted pick-a-back upon it is the novel proposal on which U. S. patent 2,308,764 has been issued to a New York inventor, Vadim S. Makaroff.

The seeming paradox in the idea of getting a boost from an unpowered aircraft disappears when it is explained that the glider is intended simply to lend the plane some additional lifting surface, making it in effect a temporary biplane. The normal engine power of the plane is enough to make efficient use of much more lifting surface than it has, in getting into the air. Once up, the auxiliary wing surface is not needed to sustain it, and the reduced surface represented by the normal wingspread permits higher speed at economical power output by the engines.

Mr. Makaroff provides a simple but strong fastening that can readily be loosened, permitting the glider pilot to detach his craft and coast back to the airdrome once he has helped his big friend to get started.

Science News Letter, February 13, 1943

ENGINEERING

Anti-Freeze Solutions Containing Salts a Danger

➤ AVOID THE DANGER to your car that may come from the use of calcium chloride or other salt in an anti-freeze solution for its cooling system, is the advice of automotive engineers of the National Bureau of Standards.

These engineers, who made a special study of this matter, call attention to the danger due to hidden corrosion. The use of salt solutions is prohibited in all government-owned motor vehicles.

Salt solutions have been tried ever since automobiles were first driven in freezing temperature. Damage always resulted if the solutions were in the cooling system for more than very short periods. Salts cause corrosion. Water pumps and cylinder heads, particularly where the latter were of aluminum alloys, developed leaks which showed up only after the damage had been done.

With the present shortage of the more commonly used anti-freeze solutions, salt solutions are now being offered. Some contain inhibitors which it is claimed will protect against corrosion. The Bureau of Standards engineers do not know of any inhibitor effective under ordinary winter driving conditions.

There are a few simple tests that may be made to determine if an anti-freeze solution probably is based on calcium chloride or any other salt. The first is by weight. If a gallon of the solution weighs over 10.5 pounds, it is probably a salt solution.

A half-cupful may be boiled slowly in an iron skillet until dried. If a substantial deposit is left in the skillet it is probably salt. Two spoonfuls of the solution may be put in a glass and a drop or two of silver nitrate added. A whitish deposit or cloud will indicate calcium chloride or other salt.

The advice of the Bureau engineers with regard to any radiator preparation of unknown composition is to analyze it or to avoid it.

Science News Letter, February 13, 1943

RADIO—AERONAUTICS

Chains of Radio Beacons To Guide Air Traffic

➤ AIR TRAFFIC of the future will be guided by chains of ultra-short-wave radio beacons, as air traffic of past years was guided by chains of light beacons, Dr. Ernst F. W. Alexanderson, consulting engineer of the General Electric Company, predicted in a science forum address in Schenectady. They will cross the continent like highways, the speaker declared, enabling the aviator to fly above the clouds and yet see his way in three dimensions by radio vision, as unmistakably as if he were looking at rows of street lights on a clear night. An adaptation of the system will guide ships at sea, however thick the fog, so that collisions will have no more terrors for navigators.

A revival and perfection of the radio-echo sounding device, tried some years ago on airplanes, was another prediction of Dr. Alexanderson. This instrument was designed to tell the aviator not merely his altitude above sea level but his height relative to the actual terrain he was crossing.

Science News Letter, February 13, 1943

GEOLOGY

Fossil Remains of Giant Amphibian Found in Texas

➤ THE great-grand-uncle of all frogs, a giant amphibian with a skull more than two feet long and a foot and a half wide, that lived in Texas some 250 million years ago, more or less, is described and given scientific christening (*Journal of Geology*, Nov.-Dec.) by Prof. Alfred S. Romer and Robert V. Witter of Harvard University.

Although the creature is definitely identified as an amphibian, it had a well-developed array of teeth in both jaws, and at least part of its skin was beset with bony scales. Since modern frogs and toads have neither teeth nor scales, the kinship of this ancient giant of their tribe must be regarded as avuncular rather than directly ancestral; though Prof. Romer does state that the frogs are probably related to the extinct group of which this big amphibian is a member.

The fragmentary remains of several of these animals were found in the lower levels of strata known to geologists as the Texas red beds, which gives them a geologic age about where Carboniferous and Permian meet. The animal has been given the scientific name *Edops craigi*.

Science News Letter, February 13, 1943

CHEMISTRY

Dry-Cleaning Fluid Used In Making Smoke Screens

➤ IF YOU find yourself unable to buy your favorite dry-cleaning fluid, remember it may be concealing a warship or an attacking regiment from the enemy as a dense cloud of white smoke, or in another form it may be cleaning up the metal of a tank, truck, ship, gun or airplane.

A commonly used dry-cleaning fluid is a chlorine compound known to chemists as perchlorethylene. This may be easily converted into another compound called hexachlorethane. Hexachlorethane reacts vigorously with fine metallic zinc to form zinc chloride. The reaction liberates a large quantity of heat which instantly evaporates the zinc chloride, making the dense white smoke cloud. This is the smoke screen that hides ships or troops from the eyes of the enemy.

A compound known as trichlorethylene, closely related to perchlorethylene, is used as the metal cleaner.

Science News Letter, February 13, 1943

AGRICULTURE

Cultivating by Fire

Agriculture now reaches into the arsenal of war to borrow a new weapon in the attack on weeds; the flame thrower has been adapted for farm's mechanized war.

By DR. FRANK THONE

➤ CHEMICAL WARFARE methods have long been used by farmers against the insects that devour their crops and the parasitic fungi that make them sick. Now agriculture reaches into the arsenal of war to borrow another weapon: the flame thrower has been adapted for use in a mechanized attack on weeds.

War against weeds is still waged with the classic, old-fashioned weapon—cold steel. The hoes and weeders and cultivators that are drawn across our fields behind tractors are different in pattern but not in principle from the primitive blades forged by Blacksmith Tubalcain for Gardener Adam's grandsons, before written history began. Not until now has it occurred to anyone to use fire instead of steel.

Flame cultivation, as the new way of fighting weeds has been christened, is the invention of an Alabama planter, Price McLemore, now a major in the Army Air Corps. It has been tested with very encouraging results in sugarcane, corn and cotton fields, and is due for trials on other crops during the 1943 growing season.

Like many another revolutionary innovation, flame cultivation is basically very simple. The idea is to hit the weeds with something that will kill them but will not materially harm the crop that is striving to make headway against them.

Weeds Are Lower

It happens that the weeds most troublesome to such plants as cane, cotton and corn are not anywhere nearly as tall as the crop itself. If therefore you can hit their leafy tops with a flame that will blight them, and that still is not hot enough to harm the thick lower parts of the crop-plant stalks, you have won the battle.

That is just what the flame cultivator undertakes to do. Using two burners of already existing commercial pattern, fed by ordinary fuel oil under pressure, it spreads a sheet of fire close to the surface of the soil on opposite sides of the row of crop plants as the tractor tows it along.

One highly important effect of flame cultivation is the killing of weeds not only between the rows of plants, but between the plants in each row. This kind of weeding can be done now only by hand-hoe methods.

The burners are not exactly opposite each other, but are echeloned or staggered. If they were directly opposite, their flame areas would strike each other and turn up a ridge of fire, which would harm the crop plants. This is avoided by keeping them far enough apart and by directing their tongues of flame to miss each other.

The flame treatment does not instantly burn the weeds to a crisp. In fact, immediately after the cultivator has passed over, little or no effect is noticeable. But after a short time their leaves and green stalks wilt and in a few hours they are dead.

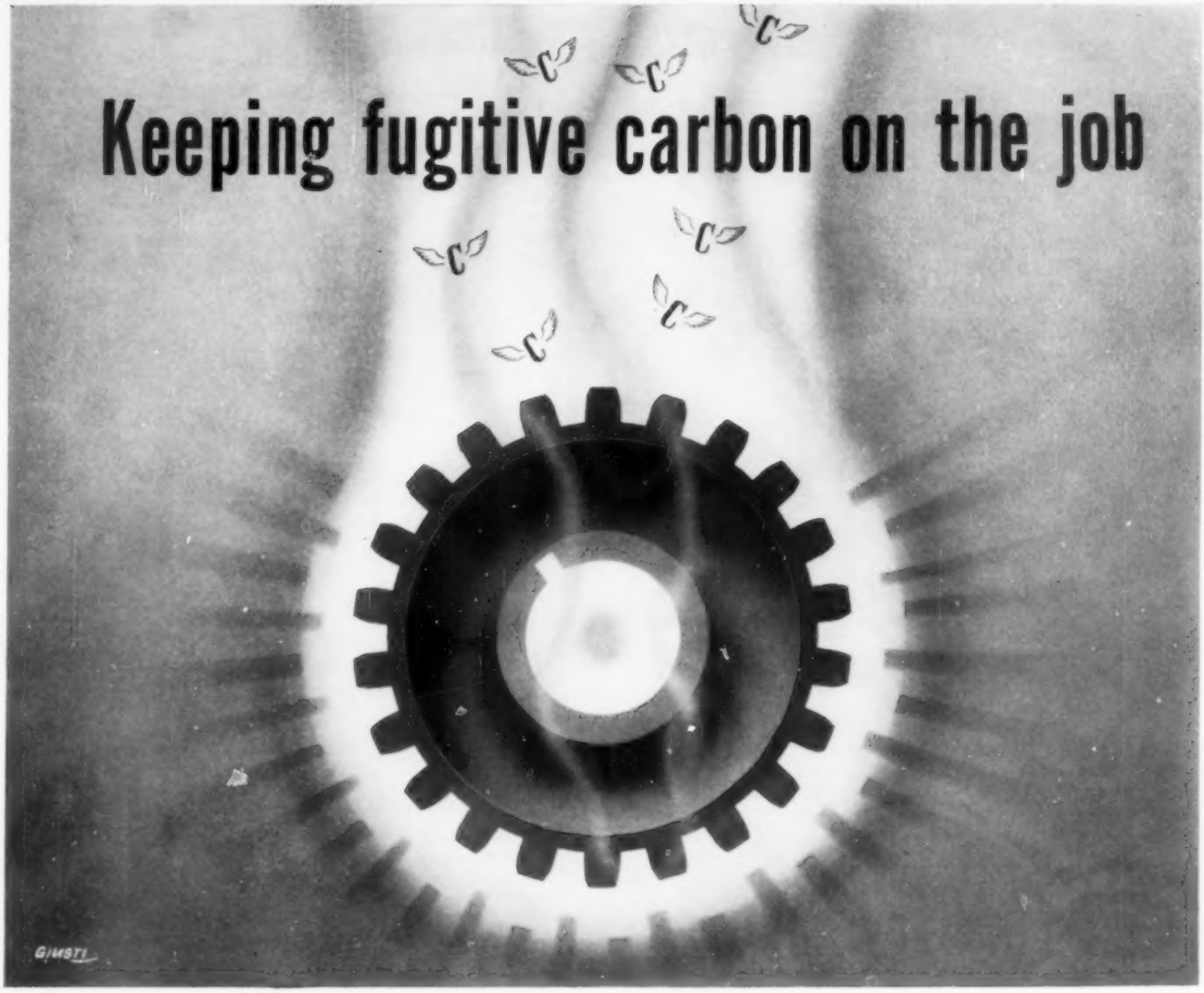
In many species, particularly in annual weeds, roots as well as tops are killed in the first treatment. In others, notably certain tough grasses, the roots survive and send up new shoots, which require repeat treatments. However, this is the experience with conventional means of cultivation also, except perhaps that with ordinary cultivators the number of return trips is greater.

There is an advantage in killing the weeds without uprooting them. The dead roots left in the soil continue to serve as binders against erosion, and the wilted tops on the surface have at least a slight mulching effect. Also, of course, the roots of the crop plants themselves are not disturbed, and the soil, left unstirred, does not begin to wash so quickly when it rains.

Effects on the crop plants are limited to slight scorching of the lower few inches of the stalk, and occasional destruction of a few bottom leaves. There seem to be no permanent ill effects to the crops on which the machine has thus far been tested. Scientists of the U. S. Department of Agriculture state that preliminary reports (*Turn to Page 108*)

FLAME CULTIVATION—The new method of killing weeds is here being used on a cane crop. Weeds are even killed between plants in the same row. This could formerly be done only by hand-hoe methods.

Keeping fugitive carbon on the job



TO WIN A WAR, we *must* have hardened steel gears, pinions, and other essential parts that can take a terrific beating —and keep on going.

All steel is basically a mixture of *iron and carbon*. To bring out its stamina and strength, steel must be heat-treated at high temperature.

But the carbon in steel is a *fugitive* thing. When exposed to highly heated air, carbon literally "boils off" the metal. The steel surface gets softer through loss of carbon.

The problem in heat-treatment is to keep fugitive carbon on the job—in the steel surface where maximum wear and strain occur.

Fortunately, Westinghouse Engineers tackled this problem years ago. They developed an "artificial atmosphere" in heat-treating furnaces that would not rob steel of its fugitive carbon—that left hardened steel parts *clean and free of scale*.

It is known as the Westinghouse "*Endogas*" Balanced Atmosphere. It is made from inexpensive natural or manufactured city gas—in a self-contained mixing chamber which is simple and easy to operate. It is exclusively a Westinghouse development.

And the balanced atmosphere in the "*Endogas*" Furnace may be varied, at will, for heat-treating practically *any kind of steel*—by merely changing the proportion of fuel gas and air in the mixing chamber. A typical result of Westinghouse "know how" in solving a problem that has perplexed metal workers since primitive man hammered out his first battle-ax!

Today, Westinghouse "*Endogas*" Furnaces are heat-treating vast quantities of gears, cams, dies, and other steel parts. They are setting the pace as

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● Illustrated above are the elements of a parfocal ten-inch lens with a focal length of 25 feet. It was specified by the astronomical observatory which ordered it, that the lens should be parfocal for the C and K spectral lines, with a maximum difference of 1 millimeter (0.039 inch). As produced in the Perkin-Elmer plant the lens was actually parfocal within a quarter of this tolerance . . . one-fourth of one millimeter (0.010 inch).

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OPTICAL DESIGN AND CONSULTATION

(*From Page 106*) from the cane-fields treated last year show no material differences in yield between flame-cultivated cane and that weeded by conventional methods.

The greatest advantage claimed for flame cultivation is its great economy in cost and man-hours per acre. One man can clear the weeds from as much land in a day as 20 or more laborers with hand hoes—a matter of considerable importance when current farm labor shortage is considered. One Louisiana planter who has seen a flame cultivator in action declared recently that he intends to have at least three of them at work on his land this summer, "because they're the only things I know of that will kill weeds in the rain."

No special parts or factory tooling-up is needed for the making of flame cultivators. Any good garage mechanic can build one, using standard materials still to be had—provided necessary priorities are taken care of. All that is needed is a pair of standard-make burners, one or two small pressure tanks, a small power-driven air compressor, and necessary pipes, connections and valves. One man met the air compressor requirement by using an old Ford Model A engine, with two cylinders functioning as engine cylinders and the other two converted into compressor cylinders.

Degree of flaming is determined partly by size and type of burner, partly by the pressure employed, partly by the rate at which the implement is moved along the row. A little experimenting tells how much treatment is needed to kill the weeds and spare the crop.

BURNERS—The shooting blue fire has no immediate effect but soon after cultivation the weeds wilt and die.

BEFORE AND AFTER—The row on the left has been flame cultivated, showing effectiveness of the new method.

A beneficial by-product of flame cultivation is the destruction of many harmful insects, especially the ones that spend part or most of their time on or near the ground. In working cotton fields by the flame method, a couple of chains are hung on the frame of the implement to disturb the boll weevils, which have the habit of dropping to the ground and "playing possum" when the bushes are shaken. This saves them most of the time, but not when the flame areas are following right along. Then it only tricks them to a fiery finish.

Science News Letter, February 13, 1943

● RADIO

Saturday, February 20, 1:30 p.m., EWT

"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. Frank G. Boudreau, chairman of the Food and Nutrition Board of the National Research Council and executive director of the Millbank Memorial Fund, will discuss "Nutrition After the War."

Monday, February 15, 9:15 a.m., EWT; 2:30 p.m., CWT; 9:30 a.m., MWT; and 1:30 p.m., PWT

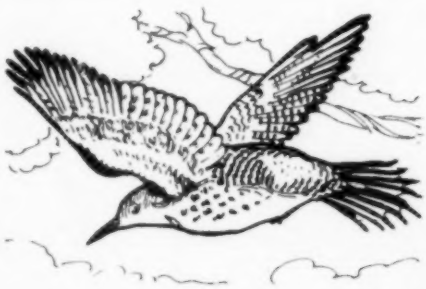
Science at Work, School of the Air of the Americas over the Columbia Broadcasting System, presented in cooperation with the National Education Association, Science Service and Science Clubs of America.

"New Soil from Old" will be the subject of the program.

BIOLOGY

NATURE RAMBLINGS

by Frank Thone



Disappear or Die!

➤ SUPPOSE you were a fighter-plane pilot, hot on the tail of a fleeing enemy plane. Conspicuously marked with orange patterns on its wings, your quarry is an unmissable target against the green of the forest below. Then, in a split second, just as you are about to press the trigger, your intended victim abruptly disappears. Just isn't anywhere. You turn and quest frantically for him, but you never see him again.

That hasn't happened yet in this war. But in the wilds' unending drama of hide-or-be-eaten it happens over and over again every day. It is a trick of camouflage practiced by a number of bird, insect and other species, known to biologists as disappearing coloration. The common flicker shows, in flight, a conspicuous white patch on its rump, and bright golden yellow undersides on wings and tail. When it alights, all these conspicuous markings are instantly covered up. Again, one species of leaf butterfly has very conspicuous bright markings on the upper surface of its wings. These are certain to catch the eye when the insect is in the air, but when it alights it folds its wings up vertically as most butterflies do, leaving only the dull, inconspicuous, dead-leaf-colored undersides exposed.

This is only one type of animal camouflage, as described by Dr. Herbert Friedmann of the U. S. National Museum in a new number of the Smithsonian Institution *War Background Studies*.

Some of the body patterns that at first glance seem to be the very opposite of concealing really do make the animal inconspicuous at a moderate distance. The bold stripes on the zebra blend it into the high grass and bushes of its background. The sharp black-and-white patterns of some birds make them practically invisible against a shore covered with varicolored pebbles.

The "flattening" effect of the common dark-above, light-below shading on animal bodies, all the way from big hoofed mammals to little fishes, is one way of defeating the tendency of shadows to give away the position of otherwise well-concealed animals. The tendency of a great many creatures to squat and flatten themselves against the ground is another shadow-eliminating trick.

The commoner camouflage devices, like concealing pattern or coloration, disruptive and "dazzle" patterns, and so on, are so common in nature as hardly to need mention. If you have ever just barely avoided stepping on a toad, or had a partridge whir out of the grass under your very nose, you will realize that even the cleverest of Army engineers still can go to school to the wild things that for millenia have been surviving only because of their skill in camouflage.

Science News Letter, February 13, 1943

Keeping 'Em Up... Bringing 'Em Down

THE fighting men and the civilian populations of the United Nations are protected with the finest anti-aircraft defense in the world.

The ability of anti-aircraft gunfire to keep enemy planes high—to bring enemy planes down—depends on effective controlling mechanism. Its "eyes" are the Anti-Aircraft Height Finder. Designed by Americans—made by Americans, this intricate observing and computing instrument is part of the "mechanical brain" that makes aiming, fuse setting and firing of anti-aircraft guns a matter of automatic precision.

The Anti-Aircraft Height Finder is but one of many Bausch & Lomb optical instruments used on fighting fronts to hasten Victory. Back of the lines, too, Bausch & Lomb products—such as Microscopes, Metallographic and Spectrographic Apparatus, Contour Measuring Projectors, are speeding production of vital war materials. And in factories American men and women are working longer, more effectively and with less fatigue because their eyesight, corrected through the professional and technical skills of eyesight experts, is kept at top efficiency.

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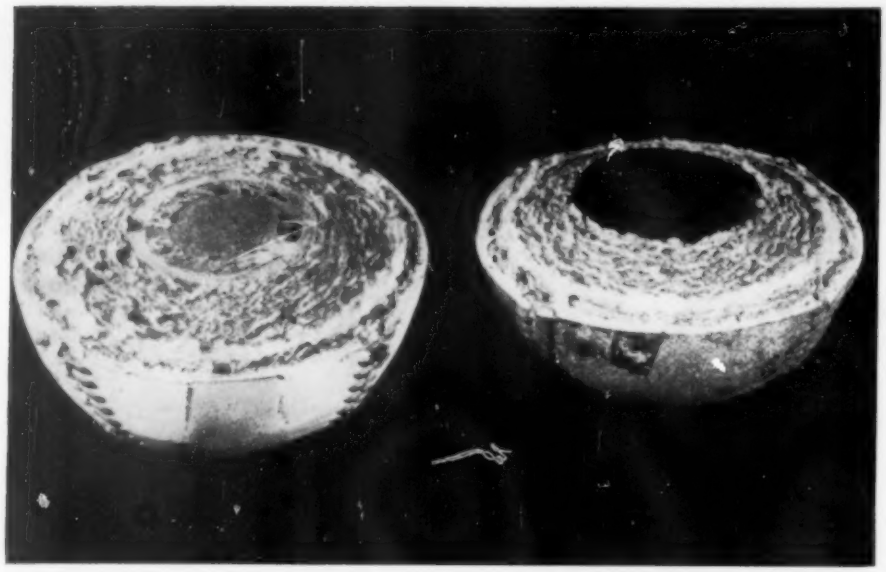

WAR BASEBALL—At the right is the new baseball made with a rubber-cushioned center borrowed from golf balls. It is compared with the old official cork-centered ball now out for the duration. The photograph is an official one of the Office of War Information.

RESOURCES

War Changes Baseball

➤ "KNOCK IT OUT of the lot" will again resound across America's ball diamonds next summer despite the absence of standard rubber-cushioned cork center baseballs.

One manufacturer took rubber golf ball cores and covered them with a layer of scrap rubber. Tests showed that they worked just as well as balls of pre-war vintage. Ban on the production of golf balls had caught the industry with a surplus of 720,000 golf ball cores which will now be teed off only from home-plate.

Only 20 tons of scrap rubber will be used in nearly three-quarters of a million baseballs. Because of the importance of baseball in the physical fitness program of the armed forces, industry and its value in maintaining civilian morale, government officials believe the project stretches a bit of rubber to do a big job, the WPB Sporting Goods Unit reports.

The War Department alone has been purchasing about 80% of all top grade baseballs manufactured.

Another type of substitute baseball has been developed by the major leagues' exclusive supplier. Scrap cork has been obtained for the centers and covered with scrap balata, a product obtained from the milky juice of a tropical tree.

Looking forward to another year when even these scrap materials will not be available, manufacturers are experimenting with the versatile plastics to maintain production of balls for America's national pastime.

Science News Letter, February 13, 1943

Soy beans are subject to much the same insect pests as ordinary beans although to a lesser extent.

Haiti has doubled its production of *sisal*, needed particularly for rope making to supply the U. S. Navy.

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ENGINEERING

Interchangeable Engines Proposed for Planes

➤ USE OF interchangeable plane engines that can be transferred or replaced under battle conditions was urged by Dr. Sanford A. Moss of the General Electric Company, in an address before the War Engineering Production meeting of the Society of Automotive Engineers in Detroit.

Any plane could be fitted with any engine of a certain specification in the ultimate development of the plan.

"One might even dare to hope for a British-American standard," Dr. Moss declared, "so that an American Integral Power Plant would fit a British plane and conversely."

Many current plane designs could not be adapted to this plan, he admitted, but if the idea proves good planes will be suitably designed.

"Ease of replacement is an advantage both in war and peace," Dr. Moss pointed out. "Rapidity of production so much needed in war time is now being helped by manufacture of various components in parallel as independent groups, later assembled to give a complete apparatus. The Integral Power Plant helps this nicely."

Improvements can also be made with greater ease. A redesigned plane can be used with the old engine or a redesigned engine with the original plane.

The idea has already been adopted to some extent abroad and interchangeable engines have been discussed in both British and German aviation journals.

Standardization of the junction of plane and engine at the fire wall was proposed by Dr. Moss as the first step toward increased use of the plan.

Science News Letter, February 13, 1943

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up a lot of water as they cook, so watch the pot and add more from time to time.

Because the beans themselves have a very mild flavor, they take careful seasoning to make them tasty. The home economists suggest serving them with something salt or sour, something fresh and crisp, or something bright and spicy. Cold cooked beans can be made into a salad for the main luncheon dish by serving on lettuce with sliced raw apple, chopped cabbage, or cress and carrots and salad dressing.

Science News Letter, February 13, 1943

PSYCHIATRY

Medicine for Sick Minds

Psychiatrists urged to favor physical means such as diet, medicines and electric shock as treatments for mental disease.

➤ TREAT MENTAL sickness by physical means such as diet, medicines and electric shock rather than by psychological methods alone, Dr. Abraham Myerson, Harvard professor of clinical psychiatry, urged fellow psychiatrists meeting to discuss mental sickness among civilians at the Neuro-Psychiatric Institute in Hartford.

The power of psychoanalysis to find the cause and hence the cure for neurosis was denied by Dr. Myerson.

"No line of cause and effect can be established in this way," he declared, "since every experience has bodily accompaniments which are much more likely to cause a later state of mind than the initial experience itself.

"It is not so much the emotional experience as the result in the body which gives either fear, disgust or any other emotion its importance in bringing about illness.

"No mind floats in thin air," he pointed out in stressing the importance of treating the body as well as the mind even when the patient is suffering from mental sickness.

"There are medicines which increase energy, others which help produce sleep, still others which improve nutrition. These are as frequently necessary as the psychological measures and in fact, in most cases of real mental sickness, they are far more important so far as immediate value is concerned.

"Many mental diseases are due to bodily disturbances and this is probably more important than the correlating fact, namely, that mental disturbances create bodily 'sickness.'"

The repressive disorders, he said, are much more easily treated by "the crude method of electric shock" than by psychological approach, even though scientists have not yet been able to find why this is so.

Every resource available must be used for successful treatment, Dr. Myerson stressed. This includes psychological measures because they represent the development of faith and self-confidence, the reinforcement of will, the growth of self-control, the development of purpose and such simple fundamentals.

Science News Letter, February 13, 1943

PHYSIOLOGY-AERONAUTICS

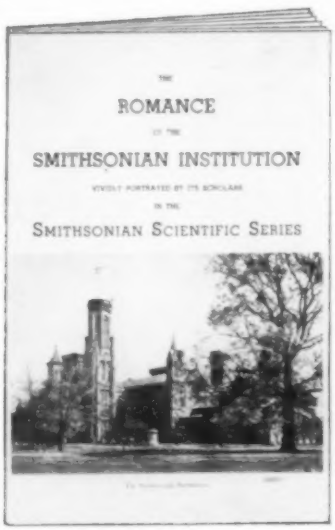
Jap Aviators' Coiffures May Be Shock Protectors

➤ JAPANESE AVIATORS captured on Guadalcanal and shown in recent newsreels had long bushy hair standing up all around their heads in a very unusual manner. They resembled the frizzy-haired Papuans of nearby New Guinea more than they did the usually sleek Japs.

Anthropologists have suggested that the aviators let their hair grow long as a head protector or additional helmet. The Zero is known to be very maneuverable and the aviators wear bands around their waists to minimize shock to their internal organs The long hair is thought also to minimize shock around the head.

Old-time football players in this country used to let their hair grow long as a protection to their heads, and it is recalled that prize-fighters often grew beards before a fight to help their faces withstand the impact of their opponents' blows.

Science News Letter, February 13, 1943



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New York, N. Y.

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• New Machines and Gadgets •

❁ *LAND PLANES forced down at sea may now be equipped with a device which automatically opens a hatch, inflates a rubber boat, and ejects it ready for use. A switch is thrown when the plane's belly hits the water, this releases compressed carbon dioxide which forces open the hatch and inflates the life-raft in seven or eight seconds.*

Science News Letter, February 13, 1943

❁ *A NEW TYPE of fluorescent light recently patented is circular in shape. Smaller concentric tubes can be attached easily to the same fixture, it is claimed. The light is designed for use in an ordinary lamp socket.*

Science News Letter, February 13, 1943

❁ *A COMPACT industrial refrigeration device produces a cooling effect equal to the melting of millions of pounds of ice every day. It should have various war uses, the manufacturer points out, such as cooling of machine tools, refrigeration of spot welding machines, and temperature control in production of instruments and lenses.*

Science News Letter, February 13, 1943

❁ *PLASTIC LUNCH BOXES replace the old ones made of metal. Guards at war plants can inspect the transparent boxes without pawing over the contents. They are easy to keep clean and will not dent or chip. The new lunch box is opened on the end by pressing small knobs, as shown in the picture.*

Science News Letter, February 13, 1943

❁ *INVISIBLE WORK gloves are put on by spreading a new cream over the skin, which dries to a protective film. It is used to protect the hands of industrial workers against irritation and infection.*

Science News Letter, February 13, 1943

❁ *SPOILED APPLES can be prevented by spraying the trees with a fruit spray, which keeps apples "glued" to their branches. Experiments have shown that the number of apples which fall to the ground can be reduced by 50 per cent if they are sprayed before harvest time with 10 parts of naphthalene acetic acid to one million parts of water.*

Science News Letter, February 13, 1943

• Glances at New Books •

➤ VIOLETS will soon be blooming again; if you would know the names of these attractive neighbors who live in your particular region, look in WILD VIOLETS OF NORTH AMERICA (*Univ. of Calif. Press,* $10) for full, accurate, plain-English descriptions, faced by some of the finest full-page color illustrations that have ever been put into a botany book, done by the well-known artist, F. Schuyler Mathews. This volume will be useful alike to botanists, gardeners and seriously interested laymen. The author, appropriately enough, bears the name of the genus she so excellently describes: Viola Brainerd Baird.

Science News Letter, February 13, 1943

➤ MILLIONS OF MEN who once lived sheltered lives are now spending their time outdoors under the hardest possible conditions. War makes even the left-behinds climate-conscious, too, if only vicariously. These and kindred considerations will insure an interested audience for Thomas A. Blair's CLIMATOLOGY, GENERAL AND REGIONAL (*Prentice-Hall,* $5). The author should know whereof he speaks, for he is a Senior Meteorologist of the U. S. Weather Bureau, besides being a professor of meteorology at the University of Nebraska.

Science News Letter, February 13, 1943

❁ *A NEW AUTOMATIC recorder has been developed to detect flaws in engines and structures, such as aircraft. The recorder makes diagrams showing elastic qualities and internal friction of the object under test. If the diagram varies from the standard tracing for the object tested, there is a defect. Nature of the defect may be interpreted from the shape of the diagram. In principle this test is the same as the thousand-year-old test for detecting flaws in chinaware by striking the rim and listening to the resultant sound.*

Science News Letter, February 13, 1943

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, *1719 N St., N. W., Washington, D. C., and ask for Gadget Bulletin 143.*

Books of the Week

THE ANATOMY OF THE NERVOUS SYSTEM: From the Standpoint of Development and Function — Stephen Walter Ranson — *Saunders,* 520 p., illus., $6.50; seventh edition, revised.

AN ANNNOTATED CHECK LIST OF THE GASTROPODS OF CAPE ARAGO, OREGON —A. Myra Keen and Charlotte L. Doty—*Oregon State College,* 16 p., 25c.

CALCULUS MADE EASY—Silvanus P. Thompson—*Macmillan,* 301 p., illus., $2, 2d ed. "Being a very simplest introduction to those beautiful methods of reckoning which are generally called by the terrifying names of the Differential Calculus and the Integral Calculus".

EVERYDAY SCIENCE—Otis W. Caldwell and Francis D. Curtis—*Ginn,* 664 p., illus., $1.96. Textbook.

FAMILY TREASURES: A Study of the Inheritance of Normal Characteristics in Man—David D. Whitney—*Jaques Cattell,* 299 p., illus., $3.50.

THE FARMER CITIZEN AT WAR—Howard R. Tolley—*Macmillan,* 318 p., $2.50.

FUNDAMENTALS OF ELECTRICITY: A Preinduction Course—Fred R. Miller—*Heath,* 220 p., illus., $1.

GENERAL ZOOLOGY—Tracy I. Storer—*McGraw-Hill,* 797 p., illus., $3.75.

GEOLOGY OF NORTH CENTRAL OREGON—Edwin T. Hodge—*Oregon State College,* 76 p., illus., 75c.

KEY TO THE NESTS OF PACIFIC COAST BIRDS — Elmo Stevenson — *Oregon State College*—71 p., illus., 50c.

ODD NUMBERS OR ARITHMETIC REVISITED —Herbert McKay—(Cambridge)—*Macmillan,* 215 p., illus., $2.

SOURCE MATERIAL ON THE HISTORY AND ETHNOLOGY OF THE CADDO INDIANS—John R. Swanton—*Govt. Print. Off.,* 332 p., illus., 75c. (Smithsonian Institution Bureau of American Ethnology Bulletin 132).

TEXTBOOK OF BIOCHEMISTRY — Benjamin Harrow—*Saunders,* 537 p., illus., $4, 3rd edition.